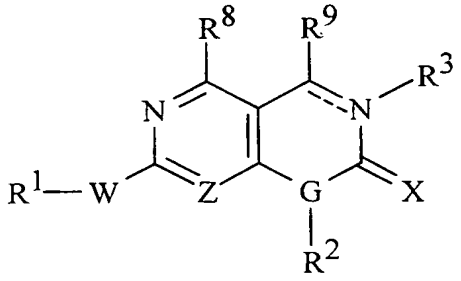
CLAIMS

What is claimed is:

1. A compound of Formula I



I

and the pharmaceutically acceptable salts thereof,

wherein:

the dotted line represents an optional double bond;

Z is N or CH;

G is N or CH;

W is NH, S, SO, or SO_2;

X is either O, S, or NR^{10};

R^1, R^2, and R^{10} are independently selected from the group consisting of H, $(CH_2)_nAr$, COR^4, $(CH_2)_n$heteroaryl, $(CH_2)_n$heterocyclyl, C_1-C_{10} alkyl, C_3-C_{10} cycloalkyl, C_2-C_{10} alkenyl, and C_2-C_{10} alkynyl, wherein n is 0, 1, 2, or 3, and the $(CH_2)_nAr$, $(CH_2)_n$heteroaryl, alkyl, cycloalkyl, alkenyl, and alkynyl groups are optionally substituted by up to 5 groups selected from NR^4R^5, $N(O)R^4R^5$, $NR^4R^5R^6Y$, alkyl, phenyl, substituted phenyl, $(CH_2)_n$heteroaryl, hydroxy, alkoxy, phenoxy, thiol, thioalkyl, halo, COR^4, CO_2R^4, $CONR^4R^5$, $SO_2NR^4R^5$, SO_3R^4, PO_3R^4, aldehyde, nitrile, nitro,

heteroaryloxy, $T(CH_2)_mQR^4$, $T(CH_2)_mC(OR^5)H\text{-}(CH_2)_mQR^4$,

$C(O)T(CH_2)_mQR^4$, $NHC(O)T(CH_2)_mQR^4$,

$T(CH_2)_mC(O)NR^4NR^5$, or $T(CH_2)_mCO_2R^4$ wherein each m is independently 1-6, T is O, S, NR^4, $N(O)R^4$, NR^4R^6Y, or CR^4R^5, and Q is O, S, NR^5, $N(O)R^5$, or NR^5R^6Y;

when the dotted line is present, R^3 is absent;

otherwise R^3 has the meanings of R^2, wherein R^2 is as defined above, as well as OH, NR^4R^5, $COOR^4$, OR^4, $CONR^4R^5$, $SO_2NR^4R^5$, SO_3R^4, PO_3R^4,

$T(CH_2)_mQR^4$, $T(CH_2)_mC(OR^5)H\text{-}(CH_2)_mQR^4$,

wherein T and Q are as defined above;

R^4 and R^5 are each independently selected from the group consisting of hydrogen, C_1-C_6 alkyl, substituted alkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, $N(C_1\text{-}C_6\text{alkyl})_{1 \text{ or } 2}$, $(CH_2)_nAr$, C_3-C_{10} cycloalkyl, heterocyclyl, and heteroaryl, or R^4 and R^5 together with the nitrogen to which they are attached optionally form a ring having 3 to 7 carbon atoms and said ring optionally contains 1, 2, or 3 heteroatoms selected from the group consisting of nitrogen, substituted nitrogen, oxygen, and sulfur;

when R^4 and R^5 together with the nitrogen to which they are attached form a ring, the said ring is optionally substituted by 1 to 3 groups selected from OH, OR^4, NR^4R^5, $(CH_2)_mOR^4$, $(CH_2)_mNR^4R^5$,

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T-$(CH_2)_mQR_4$, CO-T-$(CH_2)_mQR^4$, NH(CO)T$(CH_2)_mQR^4$, T-$(CH_2)_mCO_2R^4$, or T$(CH_2)_mCONR^4R^5$.

R^6 is alkyl;

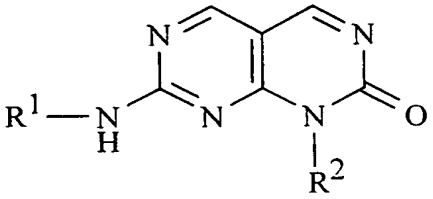
R^8 and R^9 independently are H, C_1-C_3 alkyl, NR^4R^5, $N(O)R^4R^5$, $NR^4R^5R^6Y$, hydroxy, alkoxy, thiol, thioalkyl, halo, COR^4, CO_2R^4, $CONR^4R^5$, $SO_2NR^4R^5$, SO_3R^4, PO_3R^4, CHO, CN, or NO_2;

when the dotted line is absent, R^9 is additionally carbonyl, thiocarbonyl, imine and substituted imine, oxime and oxime ether, and

Y is a halo counter-ion.

2. A compound of Claim 1 wherein Z and G both are N, W is NH, and R^8, and R^9 both are hydrogen.

3. A compound of Claim 2 having the formula



4. A compound of Claim 3 wherein R^1 is phenyl or substituted phenyl, pyridyl or substituted pyridyl.

5. A compound of Claim 4 wherein R^2 is an alkyl, substituted alkyl, or cycloalkyl unsubstituted or substituted.

6. A compound selected from:

1-Methyl-7-[4-(pyrazol-1-yl)phenylamino]pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Methyl-7-[4-(4-methylpiperazin-1-yl)phenylamino]pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Methyl-7-[4-(4-hydroxypiperidin-1-yl)phenylamino]pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Methyl-7-{4-[4-(dimethylamino)piperidin-1-yl]phenylamino}-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Isopropyl-7-[4-(pyrazol-1-yl)phenylamino]pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Isopropyl-7-[4-(4-methylpiperazin-1-yl)phenylamino]pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Isopropyl-7-[4-(4-hydroxypiperidin-1-yl)phenylamino]pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Isopropyl-7-{4-[4-(dimethylamino)piperidin-1-yl]phenylamino}-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Bicyclo[2.2.1]hept-2-yl-7-[4-(pyrazol-1-yl)phenylamino]-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one (exo);

1-Bicyclo[2.2.1]hept-2-yl-7-[4-(4-methylpiperazin-1-yl)phenylamino]pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one (exo);

1-Bicyclo[2.2.1]hept-2-yl-7-[4-(4-hydroxypiperidin-1-yl)phenylamino]pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one (exo);

1-Bicyclo[2.2.1]hept-2-yl-7-{4-[4-(dimethylamino)piperidin-1-yl]phenylamino}pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one (exo);

7-[4-(4-Aminoacetyl-piperazin-1-yl)-phenylamino]-1-cyclopentyl-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-{4-[4-(2-Amino-4-methyl-pentanoyl)-piperazin-1-yl]-phenylamino}-1-cyclopentyl-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Methyl-7-{4-[4-(3-morpholin-4-ylpropyl)piperidin-1-yl]phenylamino}pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Isopropyl-7-{4-[4-(3-morpholin-4-ylpropyl)piperidin-1-yl]phenylamino}pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Cyclopentyl-7-{4-[4-(3-morpholin-4-ylpropyl)piperidin-1-yl]phenylamino}pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Bicyclo[2.2.1]hept-2-yl-7-{4-[4-(3-morpholin-4-ylpropyl)piperidin-1-yl]phenylamino}pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one (exo);

1-Cyclopentyl-7-(4-methanesulfonyl-phenylamino)-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Cyclopentyl-7-(4-fluoro-3-methyl-phenylamino)-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[4-(3-Amino-pyrrolidin-1-yl)-phenylamino]-1-cyclopentyl-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

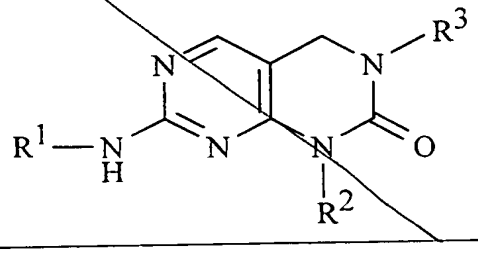
1-Cyclopentyl-7-(4-piperazin-1-yl-phenylamino)-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Cyclopentyl-7-[4-(5-methyl-hexahydro-pyrrolo[3,4-c]pyrrol-2-yl)-phenylamino]-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[4-(4-Acetyl-piperazin-1-yl)-phenylamino]-1-cycloheptyl-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one; and

1-Cyclopentyl-7-(pyridin-4-ylamino)pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one.

7. A compound of Claim 2 having the formula



8. A compound of Claim 7 wherein R^1 is alkyl, pyridyl, or phenyl, each optionally substituted with hydroxy, alkoxy, NR^4R^5, or $T(CH_2)_mQR^4$.

9. A compound selected from:

1-Methyl-7-[4-(pyrazol-1-yl)phenylamino]-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Methyl-7-[4-(4-methylpiperazin-1-yl)phenylamino]-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Methyl-7-[4-(4-hydroxypiperidin-1-yl)phenylamino]-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Methyl-7-{4-[4-(dimethylamino)piperidin-1-yl]phenylamino}-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Isopropyl-7-[4-(pyrazol-1-yl)phenylamino]-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Isopropyl-7-[4-(4-methylpiperazin-1-yl)phenylamino]-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Isopropyl-7-[4-(4-hydroxypiperidin-1-yl)phenylamino]-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Isopropyl-7-{4-[4-(dimethylamino)piperidin-1-yl]phenylamino}-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Bicyclo[2.2.1]hept-2-yl-7-[4-(pyrazol-1-yl)phenylamino]-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one (exo);

1-Bicyclo[2.2.1]hept-2-yl-7-[4-(4-methylpiperazin-1-yl)phenylamino]-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one (exo);

1-Bicyclo[2.2.1]hept-2-yl-7-[4-(4-hydroxypiperidin-1-yl)phenylamino]-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one (exo);

1-Bicyclo[2.2.1]hept-2-yl-7-{4-[4-(dimethylamino)piperidin-1-yl]phenylamino}-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one (exo);

7-[4-(4-Aminoacetyl-piperazin-1-yl)-phenylamino]-1-cyclopentyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-{4-[4-(2-Amino-4-methyl-pentanoyl)-piperazin-1-yl]-phenylamino}-1-cyclopentyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Methyl-7-{4-[4-(3-morpholin-4-ylpropyl)piperidin-1-yl]phenylamino}-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Isopropyl-7-{4-[4-(3-morpholin-4-ylpropyl)piperidin-1-yl]phenylamino}-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Cyclopentyl-7-{4-[4-(3-morpholin-4-ylpropyl)piperidin-1-yl]phenylamino}-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Bicyclo[2.2.1]hept-2-yl-7-{4-[4-(3-morpholin-4-ylpropyl)piperidin-1-yl]phenylamino}-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one (exo);

1-Cyclopentyl-7-(pyridin-4-ylamino)-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Cyclopentyl-7-(4-methanesulfonyl-phenylamino)-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Cyclopentyl-7-(4-fluoro-3-methyl-phenylamino)-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[4-(3-Amino-pyrrolidin-1-yl)-phenylamino]-1-cyclopentyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[4-(4-Acetyl-piperazin-1-yl)-phenylamino]-1-cyclopentyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Cyclopentyl-7-(4-piperazin-1-yl-phenylamino)-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

1-Cyclopentyl-7-[4-(5-methyl-hexahydro-pyrrolo[3,4-c]pyrrol-2-yl)-phenylamino]-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[4-(4-Aminoacetyl-piperazin-1-yl)-phenylamino]-3-(3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[4-(4-Aminoacetyl-piperazin-1-yl)-phenylamino]-3-(2-chloro-3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[4-(4-Aminoacetyl-piperazin-1-yl)-phenylamino]-3-(2,6-dichloro-3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[4-(4-Aminoacetyl-piperazin-1-yl)-phenylamino]-3-(2-methyl-3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[4-(4-Aminoacetyl-piperazin-1-yl)-phenylamino]-3-(2,6-dimethyl-3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[4-(2-Diethylamino-ethoxy)-phenylamino]-3-(3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[4-(2-Diethylamino-ethoxy)-phenylamino]-3-(2-chloro-3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[4-(2-Diethylamino-ethoxy)-phenylamino]-3-(2,6-dichloro-3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[4-(2-Diethylamino-ethoxy)-phenylamino]-3-(2-methyl-3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[4-(2-Diethylamino-ethoxy)-phenylamino]-3-(2,6-dimethyl-3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-(4-Diethylamino-butylamino)-3-(3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-(4-Diethylamino-butylamino)-3-(2-chloro-3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-(4-Diethylamino-butylamino)-3-(2,6-dichloro-3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-(4-Diethylamino-butylamino)-3-(2-methyl-3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-(4-Diethylamino-butylamino)-3-(2,6-dimethyl-3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-(Pyridin-4-ylamino)-3-(3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-(Pyridin-4-ylamino)-3-(2-chloro-3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-(Pyridin-4-ylamino)-3-(2,6-dichloro-3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-(Pyridin-4-ylamino)-3-(2,6-dimethyl-3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-(Pyridin-4-ylamino)-3-(2-methyl-3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-(Pyridin-4-ylamino)-3-(2,6-dichloro-3,5-dimethoxy-phenyl)-1-cyclopentyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

3-(2-Chloro-3,5-dimethoxy-phenyl)-7-(4-diethylamino-butylamino)-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

3-(2-Chloro-3,5-dimethoxy-phenyl)-7-[4-(2-diethylamino-ethoxy)-phenylamino]-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

3-(2-Chloro-3,5-dimethoxy-phenyl)-7-(pyridin-4-ylamino)-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

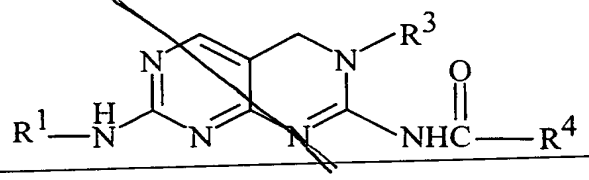
3-(3,5-Dimethoxy-phenyl)-7-(pyridin-4-ylamino)-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[4-(2-Diethylamino-ethoxy)-phenylamino]-3-(3,5-dimethoxy-phenyl)-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

3-(2,6-Dichloro-3,5-dimethoxy-phenyl)-7-(pyridin-4-ylamino)-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one; and

3-(2,6-Dichloro-3,5-dimethoxy-phenyl)-7-[4-(2-diethylamino-ethoxy)-phenylamino]-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one.

10. A compound of Claim 2 having the formula



11. A compound selected from:

1-[7-[4-(2-Diethylamino-ethoxy)-phenylamino]-3-(3,5-dimethoxy-phenyl)-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2-yl]-3-ethyl-urea;

1-{3-(2-Chloro-3,5-dimethoxy-phenyl)-7-[4-(2-diethylamino-ethoxy)-phenylamino]-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2-yl}-3-ethyl-urea;

1-*tert*-Butyl-3-[7-[4-(2-diethylamino-ethoxy)-phenylamino]-3-(3,5-dimethoxy-phenyl)-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2-yl]-urea;

1-*tert*-Butyl-3-{3-(2-chloro-3,5-dimethoxy-phenyl)-7-[4-(2-diethylamino-ethoxy)-phenylamino]-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2-yl}-urea;

1-*tert*-Butyl-3-[3-(3,5-dimethoxy-phenyl)-7-(pyridin-4-ylamino)-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2-yl]-urea;

1-[3-(3,5-Dimethoxy-phenyl)-7-(pyridin-4-ylamino)-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2-yl]-3-ethyl-urea;

1-*tert*-Butyl-3-[3-(2-chloro-3,5-dimethoxy-phenyl)-7-(pyridin-4-ylamino)-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2-yl]-urea;

1-[3-(2-Chloro-3,5-dimethoxy-phenyl)-7-(pyridin-4-ylamino)-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2-yl]-3-ethyl-urea;

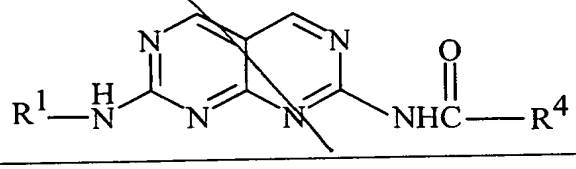
1-[3-(2-Chloro-3,5-dimethoxy-phenyl)-7-(4-diethylamino-butylamino)-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2-yl]-3-ethyl-urea;

3-Methyl-N-{7-[4-(5-methyl-hexahydro-pyrrolo[3,4-c]pyrrol-2-yl)-phenylamino]-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2-yl}-butyramide;

1-{7-[4-(4-Acetyl-piperazin-1-yl)-phenylamino]-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2-yl}-3-isopropyl-urea; and

1-*tert*-Butyl-3-[3-(2-chloro-3,5-dimethoxy-phenyl)-7-(4-diethylamino-butylamino)-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2-yl]-urea.

12. A compound of Claim 2 having the formula



13. A compound selected from:

1-[7-(4-Fluoro-phenylamino)-pyrimido[4,5-*d*]pyrimidin-2-yl]-3-methyl-urea;

1-Isopropyl-3-(7-phenylamino-pyrimido[4,5-*d*]pyrimidin-2-yl)-urea;

1-{7-[4-(3-Aminomethyl-pyrrolidin-1-yl)-phenylamino]-pyrimido[4,5-*d*]pyrimidin-2-yl}-3-isopropyl-urea;

1-Isopropyl-3-[7-(4-piperazin-1-yl-phenylamino)-pyrimido[4,5-*d*]pyrimidin-2-yl]-urea;

1-{7-[4-(4-Acetyl-piperazin-1-yl)-phenylamino]-pyrimido[4,5-*d*]pyrimidin-2-yl}-3-isopropyl-urea;

N-{7-[4-(3-Amino-pyrrolidin-1-yl)-phenylamino]-pyrimido[4,5-*d*]pyrimidin-2-yl}-3-methyl-butyramide;

N-[7-(4-Piperazin-1-yl-phenylamino)-pyrimido[4,5-*d*]pyrimidin-2-yl]-isobutyramide;

N-{7-[4-(4-Acetyl-piperazin-1-yl)-phenylamino]-pyrimido[4,5-*d*]pyrimidin-2-yl}-3-methyl-butyramide;

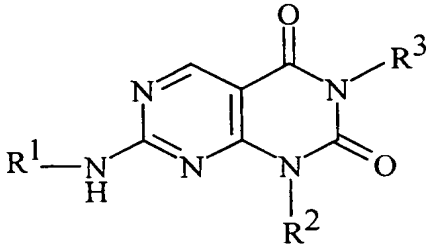
3-Methyl-N-[7-(pyridin-4-ylamino)-pyrimido[4,5-*d*]pyrimidin-2-yl]-butyramide;

1-Isopropyl-3-[7-(pyridin-4-ylamino)-pyrimido[4,5-*d*]pyrimidin-2-yl]-urea; and

N-{7-[4-(3-Aminomethyl-pyrrolidin-1-yl)-phenylamino]-pyrimido[4,5-*d*]pyrimidin-2-yl}-3-methyl-butyramide.

14. A compound of Claim 1 wherein W is S, SO, or SO_2.

15. A compound of Claim 1 having the formula



16. A compound selected from:

1-Isopropyl-7-[4-(4-methylpiperazin-1-yl)phenylamino]-1*H*-pyrimido[4,5-*d*]pyrimidine-2,4-dione;

7-[4-(2-Diethylaminoethoxy)phenylamino]-1-isopropyl-1*H*-pyrimido[4,5-*d*]pyrimidine-2,4-dione;

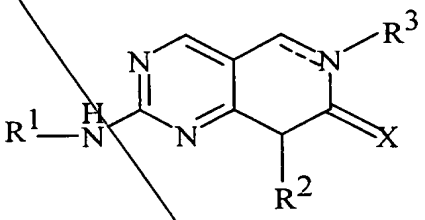
7-(4-Diethylamino-butylamino)-3-(3,5-dimethoxy-phenyl)-1-ethyl-1*H*-pyrimido[4,5-*d*]pyrimidine-2,4-dione;

7-[4-(2-Diethylamino-ethoxy)-phenylamino]-3-(3,5-dimethoxy-phenyl)-1-ethyl-1*H*-pyrimido[4,5-*d*]pyrimidine-2,4-dione; and

7-(Pyridin-4-ylamino)-3-(3,5-dimethoxy-phenyl)-l-ethyl-1*H*-pyrimido[4,5-*d*]pyrimidine-2,4-dione.

17. A compound of Claim 1 wherein Z is N, G is CH, W is NH, and R^8 and R^9 both are hydrogen.

18. A compound of Claim 17 having the formula



19. A compound selected from:

2-[4-(3-Amino-pyrrolidin-1-yl)-phenylamino]-8-isopropyl-8*H*-pyrido[4,3-*d*]pyrimidin-7-one;

8-Cyclopentyl-2-[4-(hexahydro-pyrrolo[3,4-c]pyrrol-2-yl)-phenylamino]-8*H*-pyrido[4,3-*d*]pyrimidin-7-one;

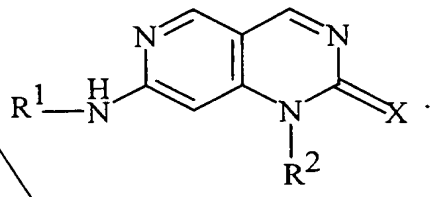
2-[4-(4-Acetyl-piperazin-1-yl)-phenylamino]-8-cyclopentyl-8*H*-pyrido[4,3-*d*]pyrimidin-7-one;

N-{2-[4-(4-Aminoacetyl-piperazin-1-yl)-phenylamino]-8-cyclopentyl-pyrido[4,3-*d*]pyrimidin-7-yl}-2,2-dimethyl-propionamide; and

N-(2-{4-[4-(2-Amino-4-methyl-pentanoyl)-piperazin-1-yl]-phenylamino}-8-cyclopentyl-pyrido[4,3-*d*]pyrimidin-7-yl)-2,2-dimethyl-propionamide.

20. A compound of Claim 1 wherein Z is CH, G is N, W is NH, and R^8 and R^9 both are hydrogen.

21. A compound of Claim 20 having the formula



22. A compound selected from:

1-(2-Benzyloxyethyl)-7-[4-(4-methylpiperazin-1-yl)phenylamino]pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

1-(Thiophen-2-yl)-7-[4-(4-methylpiperazin-1-yl)phenylamino]pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

1-(Thiophen-2-ylmethyl)-7-[4-(4-methylpiperazin-1-yl)phenylamino]pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

1-(Tetrahydrofuran-2-yl)-7-[4-(4-methylpiperazin-1-yl)phenylamino]pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

1-(Hexa-2,4-diene-1-yl)-7-[4-(4-methylpiperazin-1-yl)phenylamino]pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

1-(Prop-2-yne-1-yl)-7-[4-(4-methylpiperazin-1-yl)phenylamino]pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

1-[3-(Dimethylamino)prop-1-yl]-7-[4-(4-methylpiperazin-1-yl)phenylamino]pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

1-(3-Hydroxyprop-1-yl)-7-[4-(4-methylpiperazin-1-yl)phenylamino]pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

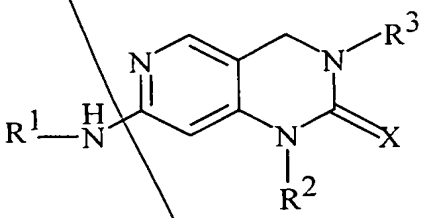
1-(Pyridin-4-ylmethyl)-7-[4-(4-methylpiperazin-1-yl)phenylamino]pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

1-(3,5-Dimethylhept-1-yl)-7-[4-(4-methylpiperazin-1-yl)phenylamino]pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

1-Cyclopentyl-7-(4-piperazin-1-ylphenylamino)pyrido[4,3-*d*]pyrimidin-2(1*H*)-one; and

7-[4-(3-Aminopyrrolidin-1-yl)phenylamino]-1-cyclopentylpyrido[4,3-*d*]pyrimidin-2(1*H*)-one.

23. A compound of Claim 20 having the formula



24. A compound selected from:

1-(2-Benzyloxyethyl)-7-[4-(4-methylpiperazin-1-yl)phenylamino]-3,4-dihydro-pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

1-(Thiophen-2-yl)-7-[4-(4-methylpiperazin-1-yl)phenylamino]-3,4-dihydro-pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

1-(Thiophen-2-ylmethyl)-7-[4-(4-methylpiperazin-1-yl)phenylamino]-3,4-dihydro-pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

1-(Tetrahydrofuran-2-yl)-7-[4-(4-methylpiperazin-1-yl)phenylamino]-3,4-dihydro-pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

1-(Hexa-2,4-diene-1-yl)-7-[4-(4-methylpiperazin-1-yl)phenylamino]-3,4-dihydro-pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

1-(Prop-2-yne-1-yl)-7-[4-(4-methylpiperazin-1-yl)phenylamino]-3,4-dihydro-pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

1-[3-(Dimethylamino)prop-1-yl]-7-[4-(4-methylpiperazin-1-yl)phenylamino]-3,4-dihydro-pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

1-(3-Hydroxyprop-1-yl)-7-[4-(4-methylpiperazin-1-yl)phenylamino]-3,4-dihydro-pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

1-(Pyridin-4-ylmethyl)-7-[4-(4-methylpiperazin-1-yl)phenylamino]-3,4-dihydro-pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

1-(3,5-Dimethylhept-1-yl)-7-[4-(4-methylpiperazin-1-yl)phenylamino]-3,4-dihydro-pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

3-(3,5-Dimethoxy-phenyl)-7-(pyridin-4-ylamino)-1-ethyl-3,4-dihydro-pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

3-(2-Chloro-3,5-Dimethoxy-phenyl)-7-(pyridin-4-ylamino)-1-ethyl-3,4-dihydro-pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

3-(2,6-Dichloro-3,5-Dimethoxy-phenyl)-7-(pyridin-4-ylamino)-1-ethyl-3,4-dihydro-pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

3-(2-Methyl-3,5-Dimethoxy-phenyl)-7-(pyridin-4-ylamino)-1-ethyl-3,4-dihydro-pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

3-(2,6-Dimethyl-3,5-Dimethoxy-phenyl)-7-(pyridin-4-ylamino)-1-ethyl-3,4-dihydro-pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

7-[4-(4-Aminoacetyl-piperazin-1-yl)-phenylamino]-3-(3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

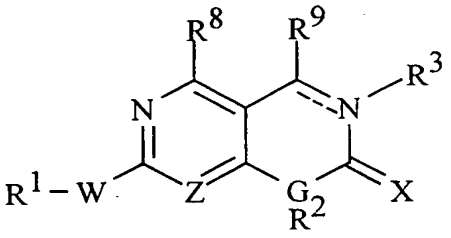
7-[4-(4-Aminoacetyl-piperazin-1-yl)-phenylamino]-3-(2-chloro-3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

7-[4-(4-Aminoacetyl-piperazin-1-yl)-phenylamino]-3-(2,6-dichloro-3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrido[4,3-*d*]pyrimidin-2(1*H*)-one;

7-[4-(4-Aminoacetyl-piperazin-1-yl)-phenylamino]-3-(2-methyl-3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrido[4,3-*d*]pyrimidin-2(1*H*)-one; and

7-[4-(4-Aminoacetyl-piperazin-1-yl)-phenylamino]-3-(2,6-dimethyl-3,5-dimethoxy-phenyl)-1-ethyl-3,4-dihydro-pyrido[4,3-*d*]pyrimidin-2(1*H*)-one.

25. A method for controlling proliferative disorders selected from the group consisting of cancer, psoriasis, vascular smooth muscle proliferation associated with a disorder selected from the group consisting of atherosclerosis, postsurgical vascular stenosis, and restenosis in mammals, diabetic retinopathy and angiogenesis, comprising administering to said mammal a therapeutically effective amount of a compound of Formula I



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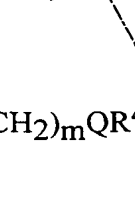
R^1, R^2, and R^{10} are independently selected from the group consisting of H, $(CH_2)_nAr$, COR^4, $(CH_2)_n$heteroaryl, $(CH_2)_n$heterocyclyl, C_1-C_{10} alkyl, C_3-C_{10} cycloalkyl, C_2-C_{10} alkenyl, and C_2-C_{10} alkynyl, wherein n is 0, 1, 2, or 3, and the $(CH_2)_nAr$, $(CH_2)_n$heteroaryl, alkyl, cycloalkyl, alkenyl, and alkynyl groups are optionally substituted by up to 5 groups selected from NR^4R^5, $N(O)R^4R^5$, $NR^4R^5R^6Y$, alkyl, phenyl, substituted phenyl, $(CH_2)_n$heteroaryl, hydroxy, alkoxy, phenoxy, thiol, thioalkyl, halo, COR^4, CO_2R^4, $CONR^4R^5$, $SO_2NR^4R^5$, SO_3R^4, PO_3R^4, aldehyde, nitrile, nitro,

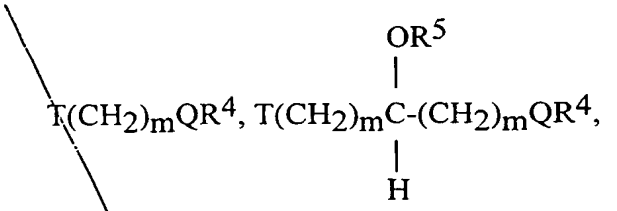


heteroaryloxy, $T(CH_2)_mQR^4$,

$C(O)T(CH_2)_mQR^4$, $NHC(O)T(CH_2)_mQR^4$, $T(CH_2)_mC(O)NR^4NR^5$, or $T(CH_2)_mCO_2R^4$ wherein each m is independently 1-6, T is O, S, NR^4, $N(O)R^4$, NR^4R^6Y, or CR^4R^5, and Q is O, S, NR^5, $N(O)R^5$, or NR^5R^6Y;

when the dotted line is present, R^3 is absent;

otherwise R^3 has the meanings of R^2, wherein R^2 is as defined above, as well as OH, NR^4R^5, $COOR^4$, OR^4, $CONR^4R^5$, $SO_2NR^4R^5$, SO_3R^4, PO_3R^4,



$T(CH_2)_mQR^4$, $T(CH_2)_mC(OR^5)H-(CH_2)_mQR^4$,

wherein T and Q are as defined above;

R^4 and R^5 are each independently selected from the group consisting of hydrogen, C_1-C_6 alkyl, substituted alkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, $N(C_1$-C_6alkyl$)_{1 \text{ or } 2}$, $(CH_2)_nAr$, C_3-C_{10} cycloalkyl, heterocyclyl, and heteroaryl, or R^4 and R^5 together with the nitrogen to which they are attached optionally form a ring having 3 to 7 carbon atoms and said ring optionally contains 1, 2, or 3 heteroatoms selected from the group consisting of nitrogen, substituted nitrogen, oxygen, and sulfur;

when R^4 and R^5 together with the nitrogen to which they are attached form a ring, the said ring is optionally substituted by 1 to 3 groups selected from OH, OR^4, NR^4R^5, $(CH_2)_mOR^4$, $(CH_2)_mNR^4R^5$, T-$(CH_2)_mQR_4$, CO-T-$(CH_2)_mQR^4$, $NH(CO)T(CH_2)_mQR^4$, T-$(CH_2)_mCO_2R^4$, or $T(CH_2)_mCONR^4R^5$.

R^6 is alkyl;

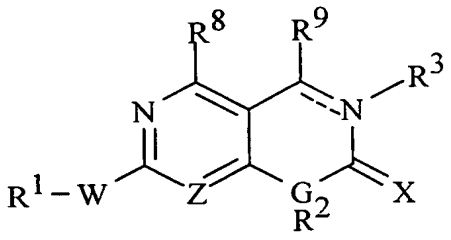
R^8 and R^9 independently are H, C_1-C_3 alkyl, NR^4R^5, $N(O)R^4R^5$, $NR^4R^5R^6Y$, hydroxy, alkoxy, thiol, thioalkyl, halo, COR^4, CO_2R^4, $CONR^4R^5$, $SO_2NR^4R^5$, SO_3R^4, PO_3R^4, CHO, CN, or NO_2;

when the dotted line is absent, R^9 is additionally carbonyl, thiocarbonyl, imine and substituted imine, oxime and oxime ether, and

Y is a halo counter-ion.

Sub A9

26. A method of inhibiting a cyclin-dependent kinase comprising contacting the cyclin-dependent kinase with a compound of Formula I



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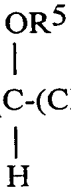
Sub A9

R^1, R^2, and R^{10} are independently selected from the group consisting of H, $(CH_2)_nAr$, COR^4, $(CH_2)_n$heteroaryl, $(CH_2)_n$heterocyclyl, C_1-C_{10} alkyl, C_3-C_{10} cycloalkyl, C_2-C_{10} alkenyl, and C_2-C_{10} alkynyl, wherein n is 0, 1, 2, or 3, and the $(CH_2)_nAr$, $(CH_2)_n$heteroaryl, alkyl, cycloalkyl, alkenyl, and alkynyl groups are optionally substituted by up to 5 groups selected from NR^4R^5, $N(O)R^4R^5$, $NR^4R^5R^6Y$, alkyl, phenyl, substituted phenyl, $(CH_2)_n$heteroaryl, hydroxy, alkoxy, phenoxy, thiol, thioalkyl, halo, COR^4, CO_2R^4, $CONR^4R^5$, $SO_2NR^4R^5$, SO_3R^4, PO_3R^4, aldehyde, nitrile, nitro,



heteroaryloxy, $T(CH_2)_mQR^4$, $T(CH_2)_mC(OR^5)H-(CH_2)_mQR^4$, $C(O)T(CH_2)_mQR^4$, $NHC(O)T(CH_2)_mQR^4$, $T(CH_2)_mC(O)NR^4NR^5$, or $T(CH_2)_mCO_2R^4$ wherein each m is independently 1-6, T is O, S, NR^4, $N(O)R^4$, NR^4R^6Y, or CR^4R^5, and Q is O, S, NR^5, $N(O)R^5$, or NR^5R^6Y;

when the dotted line is present, R^3 is absent;

otherwise R^3 has the meanings of R^2, wherein R^2 is as defined above, as well as OH, NR^4R^5, $COOR^4$, OR^4, $CONR^4R^5$, $SO_2NR^4R^5$, SO_3R^4, PO_3R^4,

$T(CH_2)_mQR^4$, $T(CH_2)_mC(OR^5)H-(CH_2)_mQR^4$,

wherein T and Q are as defined above;

R^4 and R^5 are each independently selected from the group consisting of hydrogen, C_1-C_6 alkyl, substituted alkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, $N(C_1$-C_6alkyl$)_{1 \text{ or } 2}$, $(CH_2)_nAr$, C_3-C_{10} cycloalkyl, heterocyclyl, and heteroaryl, or R^4 and R^5 together with the nitrogen to which they are attached optionally form a ring having 3 to 7 carbon atoms and said ring optionally contains 1, 2, or 3 heteroatoms selected from the group consisting of nitrogen, substituted nitrogen, oxygen, and sulfur;

when R^4 and R^5 together with the nitrogen to which they are attached form a ring, the said ring is optionally substituted by 1 to 3 groups selected from OH, OR^4, NR^4R^5, $(CH_2)_mOR^4$, $(CH_2)_mNR^4R^5$, $T\text{-}(CH_2)_mQR_4$, $CO\text{-}T\text{-}(CH_2)_mQR^4$, $NH(CO)T(CH_2)_mQR^4$, $T\text{-}(CH_2)_mCO_2R^4$, or $T(CH_2)_mCONR^4R^5$.

R^6 is alkyl;

R^8 and R^9 independently are H, C_1-C_3 alkyl, NR^4R^5, $N(O)R^4R^5$, $NR^4R^5R^6Y$, hydroxy, alkoxy, thiol, thioalkyl, halo, COR^4, CO_2R^4, $CONR^4R^5$, $SO_2NR^4R^5$, SO_3R^4, PO_3R^4, CHO, CN, or NO_2;

when the dotted line is absent, R^9 is additionally carbonyl, thiocarbonyl, imine and substituted imine, oxime and oxime ether, and

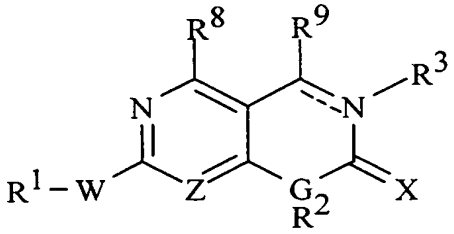
Y is a halo counter-ion.

27. A method of Claim 26 wherein said cyclin-dependent kinase is cdc2.

28. A method of Claim 26 wherein said cyclin-dependent kinase is cdk2.

29. A method of Claim 26 wherein said cyclin-dependent kinase is cdk4 or cdk6.

30. A method of inhibiting a growth factor-mediated tyrosine kinase comprising contacting said growth factor-mediated kinase with a compound of Formula I



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and the pharmaceutically acceptable salts thereof,

wherein:

the dotted line represents an optional double bond;

Z is N or CH;

G is N or CH;

W is NH, S, SO, or SO_2;

X is either O, S, or NR^{10};

R^1, R^2, and R^{10} are independently selected from the group consisting of H, $(CH_2)_nAr$, COR^4, $(CH_2)_n$heteroaryl, $(CH_2)_n$heterocyclyl, C_1-C_{10} alkyl, C_3-C_{10} cycloalkyl, C_2-C_{10} alkenyl, and C_2-C_{10} alkynyl, wherein n is 0, 1, 2, or 3, and the $(CH_2)_nAr$, $(CH_2)_n$heteroaryl, alkyl, cycloalkyl, alkenyl, and alkynyl groups are optionally substituted by up to 5 groups selected from NR^4R^5, $N(O)R^4R^5$, $NR^4R^5R^6Y$, alkyl, phenyl, substituted phenyl, $(CH_2)_n$heteroaryl, hydroxy, alkoxy, phenoxy, thiol, thioalkyl, halo, COR^4, CO_2R^4, $CONR^4R^5$, $SO_2NR^4R^5$, SO_3R^4, PO_3R^4, aldehyde, nitrile, nitro,

heteroaryloxy, $T(CH_2)_mQR^4$, $T(CH_2)_mC(OR^5)H$-$(CH_2)_mQR^4$,

$C(O)T(CH_2)_mQR^4$, $NHC(O)T(CH_2)_mQR^4$,

$T(CH_2)_mC(O)NR^4NR^5$, or $T(CH_2)_mCO_2R^4$ wherein each m is independently 1-6, T is O, S, NR^4, $N(O)R^4$, NR^4R^6Y, or CR^4R^5, and Q is O, S, NR^5, $N(O)R^5$, or NR^5R^6Y;

when the dotted line is present, R^3 is absent;

otherwise R^3 has the meanings of R^2, wherein R^2 is as defined above, as well as OH, NR^4R^5, $COOR^4$, OR^4, $CONR^4R^5$, $SO_2NR^4R^5$, SO_3R^4, PO_3R^4,

$T(CH_2)_mQR^4$, $T(CH_2)_mC(OR^5)H$-$(CH_2)_mQR^4$,

wherein T and Q are as defined above;

R^4 and R^5 are each independently selected from the group consisting of hydrogen, C_1-C_6 alkyl, substituted alkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, $N(C_1$-C_6alkyl$)_{1 \text{ or } 2}$, $(CH_2)_nAr$, C_3-C_{10} cycloalkyl, heterocyclyl, and heteroaryl, or R^4 and R^5 together with the nitrogen to which they are attached optionally form a ring having 3 to 7 carbon atoms and said ring optionally contains 1, 2, or 3 heteroatoms selected from the group consisting of nitrogen, substituted nitrogen, oxygen, and sulfur;

when R^4 and R^5 together with the nitrogen to which they are attached form a ring, the said ring is optionally substituted by 1 to 3 groups selected from OH, OR^4, NR^4R^5, $(CH_2)_mOR^4$, $(CH_2)_mNR^4R^5$,

$T\text{-}(CH_2)_mQR_4$, $CO\text{-}T\text{-}(CH_2)_mQR^4$, $NH(CO)T(CH_2)_mQR^4$, $T\text{-}(CH_2)_mCO_2R^4$, or $T(CH_2)_mCONR^4R^5$.

R^6 is alkyl;

R^8 and R^9 independently are H, C_1-C_3 alkyl, NR^4R^5, $N(O)R^4R^5$, $NR^4R^5R^6Y$, hydroxy, alkoxy, thiol, thioalkyl, halo, COR^4, CO_2R^4, $CONR^4R^5$, $SO_2NR^4R^5$, SO_3R^4, PO_3R^4, CHO, CN, or NO_2;

when the dotted line is absent, R^9 is additionally carbonyl, thiocarbonyl, imine and substituted imine, oxime and oxime ether, and

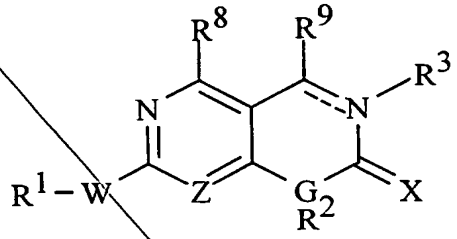
Y is a halo counter-ion.

31. A method of Claim 30 wherein said growth factor-mediated tyrosine kinase is platelet derived growth factor (PDGF).

32. A method of Claim 30 wherein said growth factor-mediated tyrosine kinase is fibroblast growth factor (FGF).

33. A method of Claim 30 wherein said growth factor-mediated tyrosine kinase is vascular endothelial growth factor (VEGF).

34. A method of inhibiting a non-receptor tyrosine kinase comprising contacting said non-receptor tyrosine kinase with a compound of Formula I



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and the pharmaceutically acceptable salts thereof,

wherein:

the dotted line represents an optional double bond;

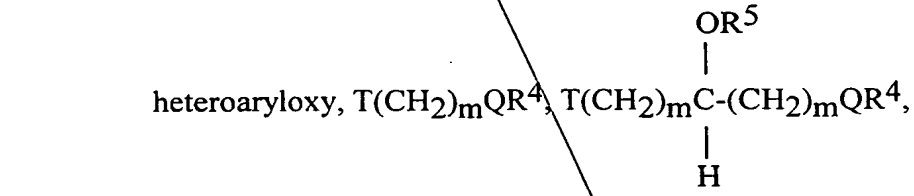
Z is N or CH;

G is N or CH;

W is NH, S, SO, or SO_2;

X is either O, S, or NR^{10};

R^1, R^2, and R^{10} are independently selected from the group consisting of H, $(CH_2)_nAr$, COR^4, $(CH_2)_n$heteroaryl, $(CH_2)_n$heterocyclyl, C_1-C_{10} alkyl, C_3-C_{10} cycloalkyl, C_2-C_{10} alkenyl, and C_2-C_{10} alkynyl, wherein n is 0, 1, 2, or 3, and the $(CH_2)_nAr$, $(CH_2)_n$heteroaryl, alkyl, cycloalkyl, alkenyl, and alkynyl groups are optionally substituted by up to 5 groups selected from NR^4R^5, $N(O)R^4R^5$, $NR^4R^5R^6Y$, alkyl, phenyl, substituted phenyl, $(CH_2)_n$heteroaryl, hydroxy, alkoxy, phenoxy, thiol, thioalkyl, halo, COR^4, CO_2R^4, $CONR^4R^5$, $SO_2NR^4R^5$, SO_3R^4, PO_3R^4, aldehyde, nitrile, nitro,



heteroaryloxy, $T(CH_2)_mQR^4$, $T(CH_2)_mC(OR^5)H$-$(CH_2)_mQR^4$,

$C(O)T(CH_2)_mQR^4$, $NHC(O)T(CH_2)_mQR^4$, $T(CH_2)_mC(O)NR^4NR^5$, or $T(CH_2)_mCO_2R^4$ wherein each m is independently 1-6, T is O, S, NR^4, $N(O)R^4$, NR^4R^6Y, or CR^4R^5, and Q is O, S, NR^5, $N(O)R^5$, or NR^5R^6Y;

when the dotted line is present, R^3 is absent;

otherwise R^3 has the meanings of R^2, wherein R^2 is as defined above, as well as OH, NR^4R^5, $COOR^4$, OR^4, $CONR^4R^5$, $SO_2NR^4R^5$, SO_3R^4, PO_3R^4,

$T(CH_2)_mQR^4$, $T(CH_2)_mC(OR^5)H-(CH_2)_mQR^4$,

wherein T and Q are as defined above;

R^4 and R^5 are each independently selected from the group consisting of hydrogen, C_1-C_6 alkyl, substituted alkyl, C_2-C_6 alkenyl, C_2-C_6 alkynyl, $N(C_1$-C_6alkyl$)_{1 \text{ or } 2}$, $(CH_2)_nAr$, C_3-C_{10} cycloalkyl, heterocyclyl, and heteroaryl, or R^4 and R^5 together with the nitrogen to which they are attached optionally form a ring having 3 to 7 carbon atoms and said ring optionally contains 1, 2, or 3 heteroatoms selected from the group consisting of nitrogen, substituted nitrogen, oxygen, and sulfur;

when R^4 and R^5 together with the nitrogen to which they are attached form a ring, the said ring is optionally substituted by 1 to 3 groups selected from OH, OR^4, NR^4R^5, $(CH_2)_mOR^4$, $(CH_2)_mNR^4R^5$, $T\text{-}(CH_2)_mQR_4$, $CO\text{-}T\text{-}(CH_2)_mQR^4$, $NH(CO)T(CH_2)_mQR^4$, $T\text{-}(CH_2)_mCO_2R^4$, or $T(CH_2)_mCONR^4R^5$.

R^6 is alkyl;

R^8 and R^9 independently are H, C_1-C_3 alkyl, NR^4R^5, $N(O)R^4R^5$, $NR^4R^5R^6Y$, hydroxy, alkoxy, thiol, thioalkyl, halo, COR^4, CO_2R^4, $CONR^4R^5$, $SO_2NR^4R^5$, SO_3R^4, PO_3R^4, CHO, CN, or NO_2;

when the dotted line is absent, R^9 is additionally carbonyl, thiocarbonyl, imine and substituted imine, oxime and oxime ether, and

Y is a halo counter-ion.

35. A method of Claim 33 wherein said non-receptor tyrosine kinase is selected from a transforming gene of the Rous sarcoma retrovirus (Src) family.

36. A method of inhibiting a serine kinase in a mammal comprising administering a serine kinase inhibiting among of a compound of Claim 1.

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37. A method of treating a subject suffering from diseases caused by vascular smooth muscle cell proliferation comprising administering to said subject a therapeutically effective amount of a compound of Claim 1.

38. A method of treating a subject suffering from cancer comprising administering to said subject a therapeutically effective amount of a compound of Claim 1.

39. A method of inhibiting angiogenesis in a mammal comprising administering an anti-angiogenic effective amount of a compound of Claim 1.

40. A method according to Claim 39 wherein the disease state caused by angiogenesis is selected from human cancer, macular degeneration, diabetic retinopathy, surgical adhesions, and psoriasis.

41. A method of inhibiting a wee-1 kinase enzyme in a mammal comprising administering a wee-1 kinase inhibiting amount of a compound of Claim 1.

42. A compound selected from:

7-[3-(Carboxy)-phenylamino]-3-(2,6-dichloro-phenyl)-1-methyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[3-(N-Dimethylaminopropyl-carboxamide)-phenylamino]-3-(2,6-dichloro-phenyl)-1-methyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[3-(N-Dimethylaminopropyl-carboxamide)-phenylamino]-3-(2,6-dichloro-3-hydroxy-phenyl)-1-methyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[3-(Carboxy)-phenylamino]-3-(2,6-dichloro-3-hydroxy-phenyl)-1-methyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

3-(2,6-Dichloro-phenyl)-7-[4-(2-ethylamino-ethoxy)-phenylamino]-1-methyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

3-(2,6-Dichloro-3-hydroxy-phenyl)-7-[4-(2-ethylamino-ethoxy)-phenylamino]-1-methyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[4-(Carboxamide)-phenylamino]-3-(2,6-dichloro-phenyl)-1-methyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[4-(Carboxamide)-phenylamino]-3-(2,6-dichloro-3-hydroxy-phenyl)-1-methyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

3-(2,6-Dichloro-phenyl)-7-(3-hydroxymethyl-phenylamino)-1-methyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

3-(2,6-Dichloro-phenyl)-7-(4-morpholin-4-yl-phenylamino)-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

3-(2,6-Dichloro-3-hydroxy-phenyl)-1-methyl-7-(4-morpholin-4-yl-phenylamino)-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

3-(2,6-Dichloro-3-hydroxy-phenyl)-7-(3-hydroxymethyl-phenylamino)-1-methyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[4-(3-Carboxypropyl)-phenylamino]-3-(2,6-dichloro-phenyl)-1-methyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

7-[4-(3-Carboxypropyl)-phenylamino]-3-(2,6-dichloro-3-hydroxy-phenyl)-1-methyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one;

3-(2,6-Dichloro-phenyl)-7-[4-(formyl-phenylamino]- 1-methyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one; and

3-(2,6-Dichloro-3-hydroxy-phenyl)-7-[4-(formyl-phenylamino]- 1-methyl-3,4-dihydro-pyrimido[4,5-*d*]pyrimidin-2(1*H*)-one.

43. A pharmaceutical formulation comprising a compound of Claim 1 in combination with a pharmaceutically acceptable carrier, diluent, or excipient.

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